

## CLAIMS

What is claimed is:

1. A method of using a user equipment (UE) in a wireless time division duplex communication system using code division multiple access, where the system communicates using communication bursts, each communication burst having a unique channelization code and a midamble code which is uniquely related to the channelization code, each such midamble code being uniquely related to one or more channelization code, the method comprising:

receiving communication bursts by the UE;

detecting each midamble code in a received communication burst;

determining the channelization codes related to each detected midamble based on a mapping of midamble codes to related channelization codes;

detecting channelization codes in the received communication burst from among the determined channelization codes; and

recovering data from the received communication burst based on in part the detected channelization codes.

2. The method of claim 1 wherein channelization code detection comprises match filtering the received burst for each determined channelization code to produce a filtered signal corresponding to each determined channelization code, measuring the power of each filtered signal produced and comparing the power measurements.

3. The method of claim 2 wherein the channelization code detection compares the power measurements to a predetermined threshold whereby a determined channelization code is detected if the power measurement of the filtered signal associated with matched filtering for that determined channelization code exceeds the threshold.

4. The method of claim 1 further comprising using received midambles of received bursts for producing channel estimations of the received bursts wherein the channel estimation of a received burst is used for the midamble detection, the channelization code detection and the data recovery.

5. The method of claim 4 wherein channelization code detection comprises match filtering the received burst for each determined channelization code to produce a filtered signal corresponding to each determined channelization code, measuring the power of each filtered signal produced and comparing the power measurements.

6. The method of claim 5 wherein the channelization code detection compares the power measurements to a predetermined threshold whereby a determined channelization code is detected if the power measurement of the filtered signal associated with matched filtering for that determined channelization code exceeds the threshold.

7. A method of using a user equipment (UE) in a wireless time division duplex communication system using code division multiple access, where the system communicates using communication bursts, each communication burst having a unique channelization code and a midamble code which is uniquely related to the channelization code, each such midamble code being uniquely related to one channelization code, the method comprising:

receiving communication bursts by the UE;  
detecting each midamble code in a received communication burst;  
determining the channelization codes related to each detected midamble based on a mapping of midamble codes to related channelization codes; and  
recovering data from the received communication burst based on in part the determined channelization codes.

8. The method of claim 7 further comprising using received midambles of received bursts for producing channel estimations of the received bursts wherein the channel estimation of a received burst is used for the midamble detection and the data recovery.